Arjan J Houtepen

List of Publications by Year
in descending order

117 papers	5,914 citations	47006 47 h-index	76900 74 g-index
118 all docs	118 docs citations	118 times ranked	7484 citing authors

#	Article	IF	Citations
1	In Spite of Recent Doubts Carrier Multiplication Does Occur in PbSe Nanocrystals. Nano Letters, 2008, 8, 1713-1718.	9.1	291
2	On the Origin of Surface Traps in Colloidal IIâ€“VI Semiconductor Nanocrystals. Chemistry of Materials, 2017, 29, 752-761.	6.7	231
3	Perovskite Thin Films via Atomic Layer Deposition. Advanced Materials, 2015, 27, 53-58.	21.0	204
4	Electronic origins of photocatalytic activity in d0 metal organic frameworks. Scientific Reports, 2016, 6, 23676.	3.3	196
5	The Hidden Role of Acetate in the PbSe Nanocrystal Synthesis. Journal of the American Chemical Society, 2006, 128, 6792-6793.	13.7	186
6	Wide Energy-Window View on the Density of States and Hole Mobility in Poly(p-Phenylene Vinylene). Physical Review Letters, 2004, 93, 166601.	7.8	168
7	Finding and Fixing Traps in IIâ€“VI and IIIâ€“V Colloidal Quantum Dots: The Importance of Z-Type Ligand Passivation. Journal of the American Chemical Society, 2018, 140, 15712-15723.	13.7	166
8	Unity quantum yield of photogenerated charges and band-like transport in quantum-dot solids. Nature Nanotechnology, 2011, 6, 733-739.	31.5	164
9	Charge Separation in Type II Tunneling Multilayered Structures of CdTe and CdSe Nanocrystals Directly Proven by Surface Photovoltage Spectroscopy. Journal of the American Chemical Society, 2010, 132, 5981-5983.	13.7	133
10	Nature and Decay Pathways of Photoexcited States in CdSe and CdSe/CdS Nanoplatelets. Nano Letters, 2014, 14, 7039-7045.	9.1	122
11	Radiative and Nonradiative Recombination in CuInS₂ Nanocrystals and CuInS₂-Based Core/Shell Nanocrystals. Journal of Physical Chemistry Letters, 2016, 7, 3503-3509.	4.6	119
12	Tuning the Lattice Parameter of In_{<i>x</i>}Zn_{<i>y</i>}P for Highly Luminescent Lattice-Matched Core/Shell Quantum Dots. ACS Nano, 2016, 10, 4754-4762.	14.6	117
13	Epitaxially Connected PbSe Quantum-Dot Films: Controlled Neck Formation and Optoelectronic Properties. ACS Nano, 2014, 8, 11499-11511.	14.6	114
14	Photoconductivity of PbSe Quantum-Dot Solids: Dependence on Ligand Anchor Group and Length. ACS Nano, 2012, 6, 9606-9614.	14.6	113
15	Highly efficient carrier multiplication in PbS nanosheets. Nature Communications, 2014, 5, 3789.	12.8	109
16	Microsecond-sustained lasing from colloidal quantum dot solids. Nature Communications, 2015, 6, 8694.	12.8	109
17	Efficient carrier multiplication in CsPbI3 perovskite nanocrystals. Nature Communications, 2018, 9, 4199.	12.8	101
18	Continuous-wave infrared optical gain and amplified spontaneous emission at ultralow threshold by colloidal HgTe quantum dots. Nature Materials, 2018, 17, 35-42.	27.5	99

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19	Switching between Plasmonic and Fluorescent Copper Sulfide Nanocrystals. Journal of the American Chemical Society, 2017, 139, 13208-13217.	13.7	88
20	The Different Nature of Band Edge Absorption and Emission in Colloidal PbSe/CdSe Core/Shell Quantum Dots. ACS Nano, 2011, 5, 58-66.	14.6	84
21	Density of Trap States and Auger-mediated Electron Trapping in CdTe Quantum-Dot Solids. Nano Letters, 2015, 15, 3056-3066.	9.1	84
22	Organic Linker Defines the Excitedâ€State Decay of Photocatalytic MILâ€125(Ti)â€Type Materials. ChemSusChem, 2016, 9, 388-395.	6.8	84
23	Electron transport in quantum dot solids: Monte Carlo simulations of the effects of shell filling, Coulomb repulsions, and site disorder. Physical Review B, 2007, 75, .	3.2	78
24	Dipolar Structures in Colloidal Dispersions of PbSe and CdSe Quantum Dots. Nano Letters, 2007, 7, 2931-2936.	9.1	77
25	Reappraisal of Variable-Range Hopping in Quantum-Dot Solids. Nano Letters, 2008, 8, 3516-3520.	9.1	73
26	High charge-carrier mobility enables exploitation of carrier multiplication in quantum-dot films. Nature Communications, 2013, 4, 2360.	12.8	73
27	Spectroscopic Evidence for the Contribution of Holes to the Bleach of Cd-Chalcogenide Quantum Dots. Nano Letters, 2019, 19, 3002-3010.	9.1	72
28	Enhanced Hot-Carrier Cooling and Ultrafast Spectral Diffusion in Strongly Coupled PbSe Quantum-Dot Solids. Nano Letters, 2011, 11, 5471-5476.	9.1	71
29	Optical Investigation of Quantum Confinement in PbSe Nanocrystals at Different Points in the Brillouin Zone. Small, 2008, 4, 127-133.	10.0	70
30	Carrier multiplication in germanium nanocrystals. Light: Science and Applications, 2015, 4, e251-e251.	16.6	63
31	Study of Electronic Defects in CdSe Quantum Dots and Their Involvement in Quantum Dot Solar Cells. Nano Letters, 2009, 9, 856-859.	9.1	62
32	Supercrystals of CdSe Quantum Dots with High Charge Mobility and Efficient Electron Transfer to TiO₂. ACS Nano, 2010, 4, 1723-1731.	14.6	62
33	Anomalous Independence of Multiple Exciton Generation on Different Group IVâˆ’VI Quantum Dot Architectures. Nano Letters, 2011, 11, 1623-1629.	9.1	61
34	Long-lived charge separation following pump-wavelengthâ€“dependent ultrafast charge transfer in graphene/WS ₂ heterostructures. Science Advances, 2021, 7, .	10.3	60
35	Nature of the Second Optical Transition in PbSe Nanocrystals. Nano Letters, 2008, 8, 2112-2117.	9.1	59
36	Electrochemical Charging of CdSe Quantum Dot Films: Dependence on Void Size and Counterion Proximity. ACS Nano, 2013, 7, 2500-2508.	14.6	59

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37	Electrochemical gating: A method to tune and monitor the (opto)electronic properties of functional materials. Electrochimica Acta, 2007, 53, 1140-1149.	5.2	58
38	Orbital Occupation in Electron-Charged CdSe Quantum-Dot Solids. Journal of Physical Chemistry B, 2005, 109, 19634-19642.	2.6	57
39	Highly Photoconductive CdSe Quantum-Dot Films: Influence of Capping Molecules and Film Preparation Procedure. Journal of Physical Chemistry C, 2010, 114, 3441-3447.	3.1	56
40	Generating Free Charges by Carrier Multiplication in Quantum Dots for Highly Efficient Photovoltaics. Accounts of Chemical Research, 2015, 48, 174-181.	15.6	56
41	Tuning and Probing the Distribution of Cu⁺ and Cu²⁺ Trap States Responsible for Broad-Band Photoluminescence in CuInS₂ Nanocrystals. ACS Nano, 2018, 12, 11244-11253.	14.6	56
42	Size-Dependent Electron Transfer from PbSe Quantum Dots to SnO2Monitored by Picosecond Terahertz Spectroscopy. Nano Letters, 2011, 11, 5234-5239.	9.1	53
43	Fast and Efficient Photodetection in Nanoscale Quantum-Dot Junctions. Nano Letters, 2012, 12, 5740-5743.	9.1	51
44	Disorder strongly enhances Auger recombination in conductive quantum-dot solids. Nature Communications, 2013, 4, 2329.	12.8	51
45	Ga for Zn Cation Exchange Allows for Highly Luminescent and Photostable InZnP-Based Quantum Dots. Chemistry of Materials, 2017, 29, 5192-5199.	6.7	50
46	Activating Carrier Multiplication in PbSe Quantum Dot Solids by Infilling with Atomic Layer Deposition. Journal of Physical Chemistry Letters, 2013, 4, 1766-1770.	4.6	49
47	Hole Cooling Is Much Faster than Electron Cooling in PbSe Quantum Dots. ACS Nano, 2016, 10, 695-703.	14.6	49
48	Hot-electron transfer in quantum-dot heterojunction films. Nature Communications, 2018, 9, 2310.	12.8	48
49	Role of Surface Reduction in the Formation of Traps in <i>n</i>-Doped IIâ€“VI Semiconductor Nanocrystals: How to Charge without Reducing the Surface. Chemistry of Materials, 2019, 31, 4575-4583.	6.7	48
50	Spectroscopic Studies of Electron Injection in Quantum Dot Sensitized Mesoporous Oxide Films. Journal of Physical Chemistry C, 2010, 114, 18866-18873.	3.1	47
51	Spectroelectrochemical Signatures of Surface Trap Passivation on CdTe Nanocrystals. Chemistry of Materials, 2018, 30, 8052-8061.	6.7	44
52	Electrochemical Control over Photoinduced Electron Transfer and Trapping in CdSe-CdTe Quantum-Dot Solids. ACS Nano, 2014, 8, 7067-7077.	14.6	42
53	Free Charges Produced by Carrier Multiplication in Strongly Coupled PbSe Quantum Dot Films. Nano Letters, 2011, 11, 4485-4489.	9.1	41
54	Site selective 4f5d spectroscopy of CaF2:Pr3+. Journal of Luminescence, 2002, 97, 107-114.	3.1	40

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55	Highly Photoconductive InP Quantum Dots Films and Solar Cells. ACS Applied Energy Materials, 2018, 1, 6569-6576.	5.1	40
56	Locating and Controlling the Zn Content in In(Zn)P Quantum Dots. Chemistry of Materials, 2020, 32, 557-565.	6.7	40
57	Charge transfer versus molecular conductance: molecular orbital symmetry turns quantum interference rules upside down. Chemical Science, 2015, 6, 4196-4206.	7.4	38
58	Photoconductivity Enhancement in Multilayers of CdSe and CdTe Quantum Dots. ACS Nano, 2011, 5, 3552-3558.	14.6	35
59	Electrochemical Modulation of the Photophysics of Surface-Localized Trap States in Core/Shell/(Shell) Quantum Dot Films. Chemistry of Materials, 2019, 31, 8484-8493.	6.7	35
60	Coulomb Shifts upon Exciton Addition to Photoexcited PbS Colloidal Quantum Dots. Journal of Physical Chemistry C, 2014, 118, 22284-22290.	3.1	34
61	Broadband Cooling Spectra of Hot Electrons and Holes in PbSe Quantum Dots. ACS Nano, 2017, 11, 6286-6294.	14.6	34
62	Quantum Dot Solar Cells: Small Beginnings Have Large Impacts. Applied Sciences (Switzerland), 2018, 8, 1867.	2.5	34
63	Photogeneration and Mobility of Charge Carriers in Atomically Thin Colloidal InSe Nanosheets Probed by Ultrafast Terahertz Spectroscopy. Journal of Physical Chemistry Letters, 2016, 7, 4191-4196.	4.6	33
64	Broadband and Picosecond Intraband Absorption in Lead-Based Colloidal Quantum Dots. ACS Nano, 2012, 6, 6067-6074.	14.6	31
65	In Situ Spectroelectrochemical Determination of Energy Levels and Energy Level Offsets in Quantum-Dot Heterojunctions. Journal of Physical Chemistry C, 2016, 120, 5164-5173.	3.1	30
66	Localization-limited exciton oscillator strength in colloidal CdSe nanoplatelets revealed by the optically induced stark effect. Light: Science and Applications, 2021, 10, 112.	16.6	30
67	A Phonon Scattering Bottleneck for Carrier Cooling in Lead Chalcogenide Nanocrystals. ACS Nano, 2015, 9, 778-788.	14.6	29
68	Deposition Mechanism of Aluminum Oxide on Quantum Dot Films at Atmospheric Pressure and Room Temperature. Journal of Physical Chemistry C, 2016, 120, 4266-4275.	3.1	29
69	The Role of Dopant Ions on Charge Injection and Transport in Electrochemically Doped Quantum Dot Films. Journal of the American Chemical Society, 2018, 140, 6582-6590.	13.7	28
70	Cooling and Auger Recombination of Charges in PbSe Nanorods: Crossover from Cubic to Bimolecular Decay. Nano Letters, 2013, 13, 4380-4386.	9.1	26
71	Electrochemical p-Doping of CsPbBr₃ Perovskite Nanocrystals. ACS Energy Letters, 2021, 6, 2519-2525.	17.4	26
72	Electron-conducting quantum-dot solids with ionic charge compensation. Faraday Discussions, 2004, 125, 55.	3.2	24

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73	Developing Lattice Matched ZnMgSe Shells on InZnP Quantum Dots for Phosphor Applications. ACS Applied Nano Materials, 2020, 3, 3859-3867.	5.0	23
74	Atomic Layer Deposition of ZnO on InP Quantum Dot Films for Charge Separation, Stabilization, and Solar Cell Formation. Advanced Materials Interfaces, 2020, 7, 1901600.	3.7	23
75	Quantitative Electrochemical Control over Optical Gain in Quantum-Dot Solids. ACS Nano, 2021, 15, 377-386.	14.6	22
76	Dynamic Formation of Metal-Based Traps in Photoexcited Colloidal Quantum Dots and Their Relevance for Photoluminescence. Chemistry of Materials, 2021, 33, 3349-3358.	6.7	20
77	From Sphere to Multipod: Thermally Induced Transitions of CdSe Nanocrystals Studied by Molecular Dynamics Simulations. Journal of the American Chemical Society, 2013, 135, 5869-5876.	13.7	19
78	On the Stability of Permanent Electrochemical Doping of Quantum Dot, Fullerene, and Conductive Polymer Films in Frozen Electrolytes for Use in Semiconductor Devices. ACS Applied Nano Materials, 2019, 2, 4900-4909.	5.0	19
79	Effect of Ligands and Solvents on the Stability of Electron Charged CdSe Colloidal Quantum Dots. Journal of Physical Chemistry C, 2021, 125, 23968-23975.	3.1	19
80	Limits of Defect Tolerance in Perovskite Nanocrystals: Effect of Local Electrostatic Potential on Trap States. Journal of the American Chemical Society, 2022, 144, 11059-11063.	13.7	19
81	Generating Aligned Micellar Nanowire Arrays by Dewetting of Micropatterned Surfaces. Small, 2014, 10, 1729-1734.	10.0	18
82	Biexciton Binding Energy and Line width of Single Quantum Dots at Room Temperature. Nano Letters, 2021, 21, 5760-5766.	9.1	18
83	Probing formally forbidden optical transitions in PbSe nanocrystals by time- and energy-resolved transient absorption spectroscopy. Physical Review B, 2009, 80, .	3.2	16
84	Different Mechanisms for Hole and Electron Transfer along Identical Molecular Bridges: The Importance of the Initial State Delocalization. Journal of Physical Chemistry A, 2014, 118, 3891-3898.	2.5	16
85	Asymmetric Optical Transitions Determine the Onset of Carrier Multiplication in Lead Chalcogenide Quantum Confined and Bulk Crystals. ACS Nano, 2018, 12, 4796-4802.	14.6	16
86	Electronic coupling of colloidal CdSe nanocrystals monitored by thin-film positron-electron momentum density methods. Applied Physics Letters, 2009, 94, 091908.	3.3	14
87	Efficient photogeneration of charge carriers in silicon nanowires with a radial doping gradient. Nanotechnology, 2011, 22, 315710.	2.6	14
88	Surfaces of colloidal PbSe nanocrystals probed by thin-film positron annihilation spectroscopy. APL Materials, 2013, 1, .	5.1	13
89	Ligand-surface interactions and surface oxidation of colloidal PbSe quantum dots revealed by thin-film positron annihilation methods. Applied Physics Letters, 2016, 108, .	3.3	13
90	Ultrafast Charge Transfer and Upconversion in Zinc Î²â€Tetraaminophthalocyanineâ€Functionalized PbS Nanostructures Probed by Transient Absorption Spectroscopy. Angewandte Chemie - International Edition, 2017, 56, 14061-14065.	13.8	12

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91	Selective antimony reduction initiating the nucleation and growth of InSb quantum dots. Nanoscale, 2018, 10, 11110-11116.	5.6	11
92	Mechanism and Dynamics of Electron Injection and Charge Recombination in DNA. Dependence on Neighboring Pyrimidines. Journal of Physical Chemistry B, 2015, 119, 7673-7680.	2.6	10
93	Temperature Dependence of Electron Transport in CdSe Quantum Dot Films. Journal of Physical Chemistry C, 2009, 113, 15992-15996.	3.1	9
94	Enhancing the stability of the electron density in electrochemically doped ZnO quantum dots. Journal of Chemical Physics, 2019, 151, 144708.	3.0	8
95	Engineering the Band Alignment in QD Heterojunction Films via Ligand Exchange. Journal of Physical Chemistry C, 2019, 123, 29599-29608.	3.1	8
96	Positron studies of surfaces, structure and electronic properties of nanocrystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 3883-3888.	0.8	7
97	Permanent Electrochemical Doping of Quantum Dots and Semiconductor Polymers. Advanced Functional Materials, 2020, 30, 2004789.	14.9	7
98	Integrating Sphere Fourier Microscopy of Highly Directional Emission. ACS Photonics, 2021, 8, 1143-1151.	6.6	7
99	Optical Generation and Transport of Charges in Iron Pyrite Nanocrystal Films and Subsequent Injection into SnO₂. Journal of Physical Chemistry C, 2016, 120, 22155-22162.	3.1	6
100	Ultrafast Charge Transfer and Upconversion in Zinc Î²â€Tetraaminophthalocyanineâ€Functionalized PbS Nanostructures Probed by Transient Absorption Spectroscopy. Angewandte Chemie, 2017, 129, 14249-14253.	2.0	6
101	Influence of carrier density on the electronic cooling channels of bilayer graphene. Applied Physics Letters, 2011, 99, .	3.3	5
102	Room-Temperature Electron Transport in Self-Assembled Sheets of PbSe Nanocrystals with a Honeycomb Nanogeometry. Journal of Physical Chemistry C, 2019, 123, 14058-14066.	3.1	4
103	Model To Determine a Distinct Rate Constant for Carrier Multiplication from Experiments. ACS Applied Energy Materials, 2019, 2, 721-728.	5.1	4
104	Photosaturation in Luminescent LuAG:Ce Garnet Concentrator Rods. Advanced Photonics Research, 2021, 2, 2100055.	3.6	3
105	Muonium in nano-crystalline IIâ€“VI semiconductors. Physica B: Condensed Matter, 2009, 404, 837-840.	2.7	2
106	A Phonon Scattering Bottleneck for Carrier Cooling in Lead-Chalcogenide Nanocrystals. Materials Research Society Symposia Proceedings, 2015, 1787, 1-5.	0.1	2
107	All-Optical Wavelength Conversion by Picosecond Burst Absorption in Colloidal PbS Quantum Dots. ACS Nano, 2016, 10, 1265-1272.	14.6	2
108	Quantitative electrochemical control over optical gain in colloidal quantum-dot and quantum-well solids. , 2020, , .		2

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109	Response Concerning â€œOn the Interpretation of Colloidal Quantum Dot Absorption Spectraâ€. Small, 2008, 4, 1869-1870.	10.0	1
110	The Fine-Structure Constant as a Ruler for the Band-Edge Light Absorption Strength of Bulk and Quantum-Confined Semiconductors. Nano Letters, 2021, 21, 9426-9432.	9.1	1
111	Permanent Electrochemical Doping of Quantum Dot Films through Photopolymerization of Electrolyte Ions. Chemistry of Materials, 2022, 34, 4019-4028.	6.7	1
112	Broadband and picosecond intraband absorption in lead based colloidal quantum dots. , 2012, , .		0
113	Thresholdless Optical Gain using Colloidal HgTe Nanocrystals. , 2014, , .		0
114	Colloidal Two-Dimensional PbS Nanosheets and Ultrathin PbS Nanoplatelets â€“ High Mobility vs. Photoluminescence Properties. , 0, , .		0
115	Band Occupation and Charge Transport in CdSe Nanocrystal Superlattices. , 0, , .		0
116	Band Occupation and Charge Transport in CdSe Nanocrystal Superlattices. , 0, , .		0
117	Biexciton binding energy and line width of single quantum dots at room temperature. , 0, , .		0